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(71) Applicant (for all designated States except US): THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 1111 Franklin Street, 12th Floor, Oakland, CA 94607 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CHEN, David, J. [US/US]; 21 Tamarisk, Moraga, CA 94556 (US). CHAN, Doug, W. [CA/US]; 8450 Cambridge Street #3213, Houston, TX 77054 (US). CHEN, Ping-Chi, Benjamin [—/US]; 30 Panoramic Way, Walnut Creek, CA 94595 (US).

(74) Agent: CHEW, Michelle, S.: Lawrence Berkeley National Laboratory, One Cyclotron Road, MS-90B0104, Berkeley, CA 94720 (US).

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(54) Title: DNA DEPENDENT PROTEIN KINASE CATALYTIC SUBUNIT PHOSPHORYLATION SITES AND ANTIBODIES THERETO

(57) Abstract: The identification and use of two major DNA-PKcs autophosphorylation sites, Threonine (T) 2609 and Serine (S) 2056, including antibodies specific for phosphorylated T2609 and S2056. Peptides and polynucleotides encoding same, that feature these two sites of phosphorylation. The antibodies do not bind to the unphosphorylated DNA-PKcs protein or peptide, thus providing diagnostic tools to monitor the effectiveness of treatments which target the DNA repair pathway of cancer cells, and the ability to intervene or inhibit in phosphorylation of T2609 or S2056, either through application of a drug or an antibody, to increase the radiosensitivity of cancer cells.